

Appl. No. 09/851,940
Amdt. dated October 21, 2003
Reply to Office Action of July 21, 2003

PATENT

Amendments to the Specification:

Please replace paragraph [0010] beginning on pg. 3 with the following paragraph:

--[0010] In addition, in section 3.2.1 of the above-cited paper, the authors also attempt to examine the cloth in a small neighborhood near the intersection of an edge through a face, as a part of the method. The system takes a majority vote to determine which side is the correct side for the cloth to be on. However, this is a local examination, not a global one. Thus ~~intersection~~ intersections outside of this small neighborhood are not considered. Additionally, the method of the cited paper relies only on statistics; their method forces the cloth to choose "yes, I'm right" or "no, I should be on the other side." Such a ~~systems-allow~~ system allows each portion of the cloth to have an equal weight and thus the portions that have the "wrong" orientation effect the determination as much as those portions that have the "correct" orientation.--

Please replace paragraph [0034] on pg. 10 with the following paragraph:

--[0034] The intersections analyzed herein involve either intersections of a surface (strictly speaking, a 2-manifold) with itself or another surface. The case of a curve intersecting a surface (which is applicable when colliding hair or fur with a character's skin) is trivially handled by the methods described. It is noted that the cases of intersection of meshes at a point or by intersection of a whole plane are not addressed herein and do not occur in the normal process of computer animation. Such ~~intersection~~ intersections do not occur because random noise is added to the meshes so that the chances of intersections occurring where an intersection path is not formed are infinitesimal.--

Please replace paragraph [0037] on pg. 11 with the following paragraph:

--[0037] A pair of surfaces may intersect in several manners. The surfaces may not intersect, the surfaces may intersect once, as shown in Fig. 3, or they may intersect multiple times, as shown in Fig. 4. A surface may also intersect itself; however, self-intersections come

Appl. No. 09/851,940
Amdt. dated October 21, 2003
Reply to Office Action of July 21, 2003

PATENT

in two different forms. The self-intersection may result in two closed intersection paths, as shown in Fig. 5. This occurs when the surface deforms so that two distinct regions of the one surface intersect. In contrast, Fig. 6 shows a self-intersection that results in only one closed intersection path. In this case, the surface has deformed so that a single region has been folded on top of itself.[]--

Please replace paragraph [0042] on pg. 12 with the following paragraph:

--[0042] The computational methods required to implement the above steps are all straightforward, except for the step of determining which vertices lie on the "inside" of a path, versus those which lie "outside" the path. First, it is noted that it is not clear what the "inside" versus the "outside" of an intersection path is. Are the vertices on the blue mesh in Fig. 3b really the "inside" of the intersection path? It is just as valid to say that the uncolored vertices on the blue surface are surrounded by the intersection path. Second, an intersection path may ~~intersects~~ intersect itself, as shown in Figs. 7a and 7B (or even worse). Such *non-simple* paths may or may not define an inside and an outside set of vertices.--